

CLASSIFICATION REPORT OF FIRE RESISTANCE

IN ACCORDANCE WITH ÖNORM EN 13501-2:2016

28th of March 2022
TRP/FÜI

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Subject: Load-bearing solid timber floor without planking

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1. Introduction

This classification report of fire resistance defines the classification of a load-bearing solid timber floor component of the company KLH Massivholz GmbH in compliance with the process according to the standard ÖNORM EN 13501-2:2016.

2. Details on the classified product

2.1. General

The component belongs to the product type of load-bearing, space-enclosing and insulating solid timber construction as detailed in table 1.

2.2. Description

Table 1: component to be classified

| short name | exposed side to fire „b“ | cross-laminated timber element dimension (lamellae) [mm] | non-exposed side to fire „a“ |
|--|--------------------------|--|------------------------------|
| KLH® - CLT: Floor REI 90 (150 5s DL) | without planking | 150 (40 20 30 20 40) | without planking |

3. Test reports and test results supporting this classification

3.1. Description of tested component

Table 2: tested solid timber floor

| reference number of the test report | exposed side to fire „b“ | cross-laminated timber element dimension (lamellae) [mm] | non-exposed side to fire „a“ |
|-------------------------------------|--------------------------|--|------------------------------|
| MA 39 – VFA 2009-0078.01 | without planking | 146 (34 22 34 22 34) | without planking |

The cross-laminated timber elements were connected together with a stepped rebate joint with a width of 50 mm. The stepped rebate was screwed from the outside (non-exposed side to fire) with hexagon head screws M 6 x 140 mm at a distance of 200 mm.

3.2. Test report and results

Table 3: Test report and results

| name of the test laboratory | name of the customer | reference number of the report | testing standard and issue date | type of product/ test specimen | parameter | results |
|-----------------------------|-----------------------|--|---------------------------------|---|--------------------------------------|---------------------|
| MA 39 ¹⁾ | Holzforschung Austria | MA 39 – VFA 2009-0078.01 on 26.01.2009 | ÖNORM EN 1365-2: 2000-06 | Test report on the fire resistance of a load-bearing, multi-layer floor element made of cross-laminated timber (test from 11/24/2008) | applied load on supporting structure | 5 kN/m ² |
| | | | ÖNORM EN 1363-1: 2000-01 | | load-bearing capacity | 90 min |
| | | | | | integrity | 90 min |
| | | | | | thermal insulation | 90 min |

¹⁾ MA 39 – Magistrat der Stadt Wien, Magistratsabteilung 39, Prüf-, Überwachungs- und Zertifizierungsstelle der Stadt Wien

The tests specified in section 3.2 were carried out in accordance with ÖNORM EN 1365-2 and ÖNORM EN 1363-1 respectively and thus were partly carried out in accordance with older standards (see information in table 3). The current standards ÖNORM EN 1365-2:2014-12 and ÖNORM EN 1363-1:2020-04 show significant changes in terms, new definitions and specifications compared to the older versions. According to information from the test laboratory, those changes have no effect on the results in the test report and can therefore continue to be used to classify the fire resistance.

4. Classification and field of application

4.1. Classification reference

This classification was carried out in compliance with ÖNORM EN 13501-2:2016-11, Section 7.3.3.

4.2. Classification

The load-bearing solid timber floor is classified according to the following combinations of performance parameters and classes.

Span width: ≤ 4,2 m

Table 4: classification of the components

| short name | R | E | I | exposed side to fire | load [kN/m ²] | test report |
|--|--|----|----|----------------------|---------------------------|-----------------------------|
| KLH® - CLT: Floor REI 90 (150 5s DL) | 90 | 90 | 90 | b → a | ≤ 5 | MA 39 – VFA 2009-0078.01 |
| | classification of fire resistance: REI 90 | | | | | |

4.3. Direct field of application

This classification is valid for the following practical applications:

The classification results can be applied directly to similar floor structures on which one or several of the changes described below are carried out and whose construction still meets the requirements of the respective design standard with regard to its stiffness and strength:

- Increasing the thickness of the floor structure
- Regarding load-bearing components: The maximum moments and shear forces, calculated on the same basis as the forces resulting from the test load must not exceed the tested values.
- Regarding the inclination of roof constructions:
 - In the case of roofs with one or more purlins, the results apply to installation in practical applications at angles from 0° to 80°.
 - In the case of gable roofs or pitched roofs, the results for installation in practical use apply at angles of 0° to 15°

5. Restrictions

5.1. General

If one of the basic test and evaluation criteria changes or if the customer makes inadmissible technical changes to the product the validity of this classification report will expire.

5.2. Warning notice

The classification document does not constitute a type approval or certification of the product.


HOLZFORSCHUNG AUSTRIA

DI (FH) Philipp Trimmel
Authorised signatory and technical consultant

DI Sylvia Polleres
Head of Unit

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